

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office



Atty. Dkt. No.	M#	Client Ref.
310701	P-1943.063-US	
Applicant: HOFFMAN et al.		
Appn. No.: 10/759,699		
Filing Date: January 19, 2004		
Examiner: M. HASAN		Group Art Unit: 2873

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: November 22, 2004

Page **1** of **5**

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
M.H	AR	5,410,375	04/1995	Fiala	351	168	
	BR	6,366,404	04/2002	Hiraiwa et al.	359	494	
	CR	6,411,384	06/2002	Sakuma et al.	356	365	
	DR	6,417,974	07/2002	Schuster	359	754	
	ER	6,583,931	06/2003	Hiraiwa et al.	359	497	
	FR	6,672,109	01/2004	Hiraiwa	65	378	
	GR	6,683,729	01/2004	Schuster	359	656	
	HR	6,697,199	02/2004	Gerhard et al.	359	499	
A	IR	6,728,043	04/2004	Gruner et al.	359	637	
	JR	6,775,063	08/2004	Shiraishi	359	499	
	KR	2002/0085176	07/2002	Hiraiwa et al.	353	20	
	LR	2002/0149855	10/2002	Schuster	359	649	
	MR	2002/0186355	12/2002	Omura	355	53	
	NR	2003/0000453	01/2003	Unno et al.	117	1	
	OR	2003/0007253	01/2003	Schuster et al.	359	642	
	PR	2003/0012724	01/2003	Burnett et al.	423	464	
✓	QR	2003/0063393	04/2003	Omura	359	649	

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name		English Abstract		Translation Readily Available	
							Enclosed	No	Enclose	No
M.H	RR	DE 101 23 725	11/2002	Germany	Wagner et al.					X
	SR	DE 101 23 727	11/2002	Germany	Brunotte et al.					X
	TR	DE 101 25 487	01/2003	Germany	Brunotte et al.					X
	UR	DE 101 27 320	12/2002	Germany	Brunotte et al.		X			
	VR	DE 102 10 782	10/2003	Germany	Krähmer et al.		X			
	WR	2002-302628	10/2002	Japan	Mitsuhiko et al.		X			
✓	XR	2003-050349	02/2003	Japan	Naomasa et al.		X			
	YR									
	ZR									
	AAR									

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

BBR		

Examiner *M. Hasan* Date Considered: *11/14/05*

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	310701	P-1943.063-US
Applicant: HOFFMAN et al.		
Appln. No.: 10/759,699		
Filing Date: January 19, 2004		
Date: November 22, 2004	Page 2 of 5	Examiner: M. HASAN Group Art Unit: 2873

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
M.H	CCR 2003/0086157	05/2003	McGuire, Jr.	359	352	
	DDR 2003/0086171	05/2003	McGuire	359	499	
	EER 2003/0089299	05/2003	Obara et al.	117	2	
	FFR 2003/0091934	05/2003	Allan et al.	430	311	
	GGR 2003/0112501	06/2003	Sakuma	359	355	
	HHR 2003/0128349	07/2003	Unno	355	67	
	IIR 2003/0147061	08/2003	Omura	355	67	
	JJR 2003/0197946	10/2003	Omura	359	649	
	KKR 2003/0234981	12/2003	Hoffman et al.	359	494	
	LLR 2004/0001244	01/2004	Hoffman et al.	359	256	
	MMR 2004/0004757	01/2004	Schuster	359	365	
	NNR 2004/0004771	01/2004	Omura	359	649	
	OOR 2004/0005266	01/2004	Sakuma et al.	423	328'2	
	PPR 2004/0036961	02/2004	McGuire, Jr.	359	344	
	QQR 2004/0036971	02/2004	McGuire, Jr.	359	499	
	RRR 2004/0036985	02/2004	McGuire, Jr.	359	754	
	SSR 2004/0105170	06/2004	Krahmer et al.	359	726	
✓	TTR 2004/0136084	07/2004	Unno	359	649	

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
M.H	UUR WO 01/01182	01/2001	WIPO	Meda et al.				
	VVR WO 02/093257	11/2002	WIPO	Brunotte et al.		X		
	WWI WO 03/003429	01/2003	WIPO	Omura et al.		X		
	XXR WO 03/007046	01/2003	WIPO	Yamaguchi		X		
	YYR WO 03/046634	06/2003	WIPO	Omura et al.		X		
	ZZR WO 03/077011	09/2003	WIPO	Fiolka et al.				
	AAA WO 03/077007	09/2003	WIPO	Goehnermeler et al.		X		
	BBB WO 03/088330	10/2003	WIPO	Yamaguchi		X		
✓	CCC WO 04/008254	01/2004	WIPO	Yamada				
DDD								

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

EEE	<i>[Signature]</i>	Date Considered: 7/14/05
*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.		

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	310701	P-1943.063-US

Applicant: HOFFMAN et al.

Appn. No.: 10/759,699

Filing Date: January 19, 2004

Examiner: M. HASAN Group Art Unit: 2873

Date: November 22, 2004

Page **3** of **5**

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AR						

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
BR					Enclosed	No

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

M. HASAN	CR	Burnett et al., "Intrinsic Birefringence in 157 nm Materials," <i>National Institute of Standards and Technology, SEMATECH Calcium Fluoride Birefringence Workshop, July 18, 2001, Slides.</i>				
	DR	Burnett et al., "Intrinsic Birefringence in Calcium Fluoride and Barium Fluoride," <i>Rapid Communications, Physical Review B</i> , Vol. 64, November 29, 2001, pp. 241102-1 - 4.				
	ER	Burnett et al., "Intrinsic Birefringence in 157 nm Materials," <i>National Institute of Standards and Technology, Slides.</i>				
	FR	Chiba et al., "New Generation Projection Optics for ArF Lithography," <i>Optical Microlithography XV, Proceedings of SPIE</i> , Vol. 4691, 2002, pp. 679-686.				
	GR	Matsumoto et al., "Analysis of Imaging Performance Degradation," <i>Optical Microlithography XVI, Proceedings of SPIE</i> , Vol. 5040, 2003, pp. 131-138.				
	HR	Matsuyama et al., "High NA and Low Residual Aberration Projection Lens for DUV Scanner," <i>Optical Microlithography XV, Proceedings of SPIE</i> , Vol. 4691, 2002, pp. 687-695.				
	IR	Matsuyama et al., "Microlithographic Lens for DUV Scanner," <i>International Optical Design Conference 2002, Proceedings of SPIE</i> , Vol. 4832, 2002, pp. 170-174.				
	JR	Matsuyama et al., "Nikon Projection Lens Update," <i>Nikon Corporation, SPIE Microlithography 5377-65, February 27, 2004, Slides 1-25.</i>				
	KR	Matsuyama et al., "Nikon Projection Lens Update," <i>Precision Equipment Company, Nikon Corporation.</i>				
	LR	Miyawaki et al., "Development of 157nm Exposure Tools," <i>Canon, 157nm Technical Data Review, December 11-13, 2001, Slides 1-22.</i>				
	MR	Nakano et al., "The Development of 193nm-Immersion Exposure Tools," <i>Canon, International Symposium on Immersion & 157nm Lithography, August 3, 2004, Slides 1-25.</i>				
	NR	Nattermann et al., "Birefringence of CAF ₂ ," <i>Schott Lithotec, July 23, 2001, Slides.</i>				
	OR	Nogawa, "Development Status of 157nm Exposure Tools," <i>Canon Inc., Semiconductor Production Equipment Development Center, Slides 1-26.</i>				
	PR	Nogawa et al., "System Design of a 157nm Scanner," <i>Canon Inc.</i>				

Examiner

dkh/mhs

Date Considered:

7/14/05

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
 To: U.S. Department of Commerce
 (PW FORM PAT-1449)
 Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	310701	P-1943.063-US

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: November 22, 2004

Page **4** of **5**

Applicant: HOFFMAN et al.

Appln. No.: 10/759,699

Filing Date: January 19, 2004

Examiner: M. HASAN Group Art Unit: 2873

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
QR						

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
					Enclosed	No
	RR				Enclose	No

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

M-H	SR	Unno et al., "Analyses of Imaging Performance Degradation Caused by Birefringence Residual In Lens Materials," <i>Optical Microlithography XIV</i> , Proceedings of SPIE, Vol. 4346, 2001, pp. 1306-1317.				
	TR	Owa et al., "Nikon F2 Exposure Tool," <i>Nikon Corporation, 157nm Data Review</i> , December 2001, Slides 1-24.				
	UR	Owa et al., "Nikon F2 Exposure Tool," <i>Nikon Corporation, 3rd 157nm Symposium</i> , September 4, 2002, Slides 1-25.				
	VR	Shiraishi et al., "Current Status of Nikon's Investigation on CaF ₂ Intrinsic Birefringence," <i>Nikon Corporation, International SEMATECH Calcium Fluoride Birefringence Workshop</i> , July 18, 2001, Slides 1-15.				
	WR	Shiraishi et al., "Progress of Nikon's F2 Exposure Tool Development," <i>Optical Microlithography XV</i> , Proceedings of SPIE, Vol. 4691, 2002, pp. 594-601.				
	XR	Shiraishi et al., "Current Status of F2 Exposure Tool Development," <i>Precision Company, Nikon Corporation, NGL Workshop 2003</i> , July 10, 2003, pp. P1-P29.				
	YR	Suzuki et al., "Influence of the Intrinsic Birefringence in F2 Projection System," <i>Canon Inc., Calcium Fluoride Birefringence Workshop</i> , July 18, 2001, Slides.				
	ZR	Takahashi, "Current Status and Future Plan for 157nm Lithography," <i>Canon Inc., Litho Forum Los Angeles, International SEMATECH</i> , January 27-29, 2004, Slides.				
	AAR	Tirri et al., "Intrinsic Birefringence Impact on the ASML Wilton 157nm Lens," <i>ASML, Wilton, Connecticut, Intrinsic Biref Sematech</i> , July 17, 2001, Slides 1-15.				
	BBR	Van Peski, "Lens Design Software CODE V® Modification," <i>International SeMaTech</i> , July 18, 2001, Slides.				
	CCR	Walker, "Simulation of Intrinsic Birefringence of CaF ₂ in Code V®, <i>Optical Research Associates, SEMATECH Calcium Fluoride Birefringence Workshop</i> , July 18, 2001, Slides.				
	DDR	Wang, "157 nm Birefringence Measurement System Using PEM Technology," <i>Hinds Instruments</i> , Slides.				
↓	EER	Ware, "Pushing ArF to the Limits!," <i>Canon USA, DNS Lithography Breakfast Forum at SEMICON West 2003</i> , July 2003, Slides.				

Examiner	<i>Hasan</i>	Date Considered:	7/14/05
----------	--------------	------------------	---------

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	310701	P-1943.063-US
Applicant: HOFFMAN et al.		
Appn. No.: 10/759,699		
Filing Date: January 19, 2004		
Examiner: M. HASAN		Group Art Unit: 2873

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Date: November 22, 2004

Page 5 of 5

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (If appropriate)
FFR						

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
GGR					Enclosed	No

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

MHA	HHR	Webb, Intrinsic Birefringence Workshop, Coming, Coming Tropel, July 18, 2001, Slides.				
	IIR	Zeiss et al., "Intrinsic Birefringence in CaF ₂ ," Zeiss, CaF ₂ Birefringence Workshop, Slides.				
	JJR	"Business and Technology Update," Canon Europa N.V., Amstelveen, Slides.				
	KKR	Memorandum from C. Van Peski to Exposure Tool Manufacturers and Lens Designers, Regarding Birefringence of Calcium Fluoride, May 7, 2001, XP-002218848.				
↓	LLR	Memorandum from C. Van Peski to PAG Members, Regarding Birefringence of Calcium Fluoride, May 7, 2001.				
	MMR					
	NNR					
	OOR					
	PPR					
	QQR					
	RRR					
	SSR					
	TTR					
	UUR					
	VVR					
	WWI					

Examiner

cllslpda

Date Considered: 7/14/05

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.